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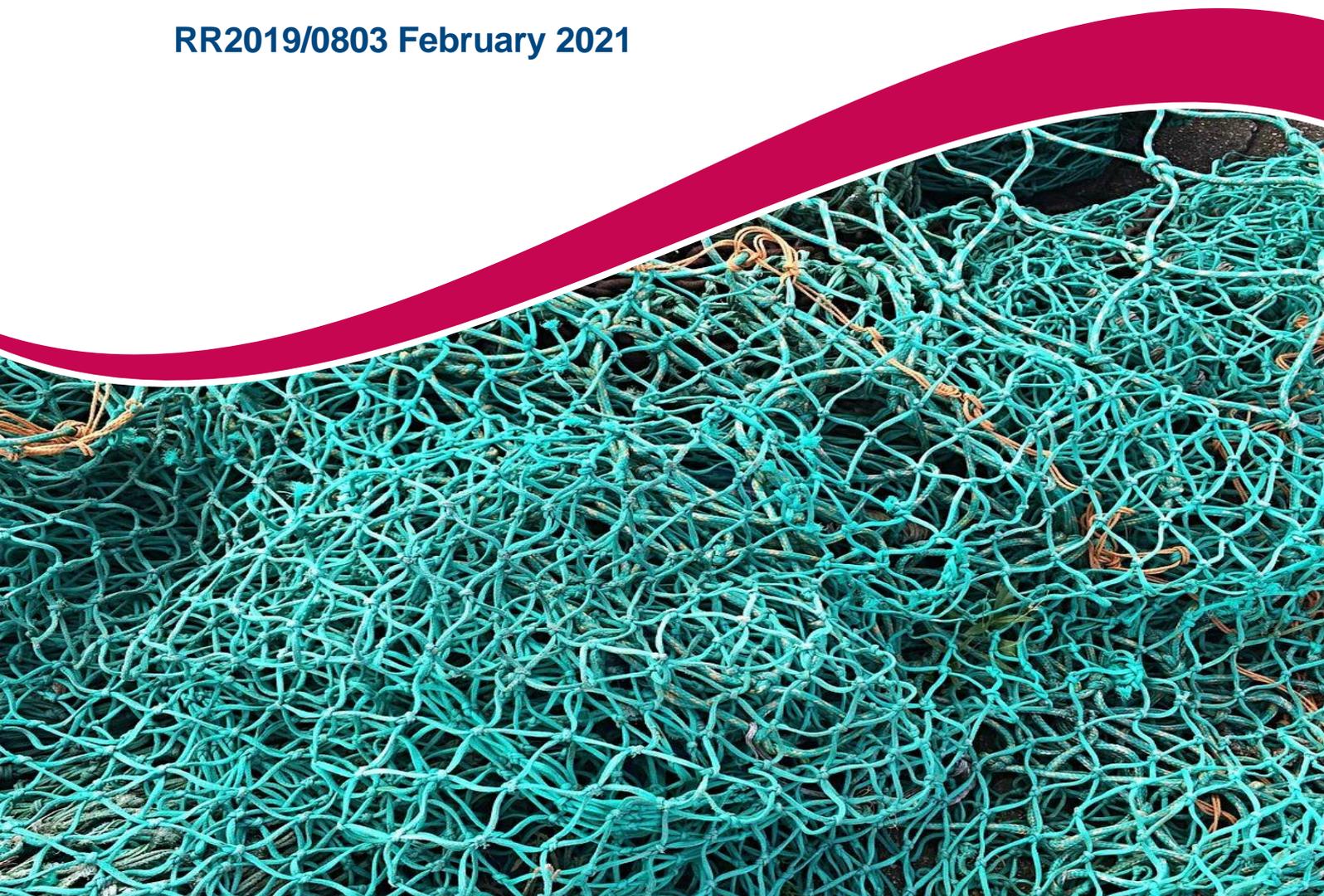


Commonwealth Small Pelagic Fishery: Status Summary Report 2020

Report to the Australian Fisheries Management Authority

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RR2019/0803 February 2021



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This publication may be cited as:

Ward, T. M. and Grammer, G. L. (2021). Commonwealth Small Pelagic Fishery: Status Summary Report 2020. Report to the Australian Fisheries Management Authority. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2020/000209-2. SARDI Research Report Series No. 1085. 8pp.

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Date: 18 February 2021

Distribution: AFMA, SARDI Aquatic Sciences, Parliamentary Library, State Library and National Library

Circulation: OFFICIAL

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Acknowledgements

This status summary report was funded by the Australian Fisheries Management Authority (AFMA). Data presented in this report were provided by: Dr Latif Siddique (Australian Fisheries Management Authority); Dr John Stewart (New South Wales Department of Primary Industries); Ms Paula Baker and Ms Monique Nelis (Victorian Department of Economic Development, Jobs, Transport and Resources); and Ms Melleessa Boyle and Mr Angelo Tsolos (SARDI Aquatic Sciences). Catch samples were processed by Mr Alex Ivey, Ms Gretta Chaplin, Ms Stephanie Garra and Ms Kate Frahn. This report was formally reviewed and approved for release by Dr Stephen Mayfield (SARDI Aquatic Sciences).

Keywords: Commonwealth SPF, Jack Mackerel, Blue Mackerel, Redbait, Sardine, purse seine, mid-water trawl, AFMA.

Overview

This report uses fishery-dependent and fishery-independent data to assess the status of target species in the East and West sub-areas of the Commonwealth Small Pelagic Fishery (SPF) in 2019/20. This status summary report updates the stock assessment report of Ward and Grammer (2019) and the status summary report of Ward and Grammer (2021).

The target species in the SPF are Jack Mackerel (*Trachurus declivis*), Blue Mackerel (*Scomber australasicus*), Redbait (*Emmelichthys nitidus*) and, in the Australian Sardine sub-area of the East sub-area, Australian Sardine (*Sardinops sagax*). The primary fishing methods are purse-seining and mid-water trawling. The assessment uses commercial catch and effort data for the SPF up to 30 April 2020 and biological information (size and age structures, reproduction, maturity). Data from State-managed commercial fisheries are used to estimate the total catch of each species in each sub-area.

The SPF Harvest Strategy 2008 (last revised April 2017) specifies that the primary technique for assessing the status of SPF species is the Daily Egg Production Method (DEPM). To retain a species in a sub-area at Tier 1, where exploitation rates are highest, the DEPM must be applied every 5 years. Between applications of the DEPM, fishery-dependent data are analysed to identify variations in fishing patterns or catches that may be indicative of changes in stock status.

Between 2010/11 and 2014/15, catches in the SPF of all species in both sub-areas were low (<200 t per annum). Effort and catch in the SPF increased during 2015/16 and 2016/17, when a mid-water factory trawler operated in offshore waters of both sub-areas. Since 2017/18, a smaller mid-water trawler without onboard processing facilities began operating in inshore waters of the East sub-area. Negligible fishing was undertaken by SPF vessels in the West sub-area in 2018/19 or 2019/20.

Jack Mackerel

The estimate of spawning biomass for Jack Mackerel East in 2019 was 156,292 t (95% CI = 49,120–263,496) (Ward et al. 2020). The total catch of Jack Mackerel East in 2019/20 was 7,852 t, the highest catch in more than 20 years (i.e. since 1997/98). The main fishery for Jack Mackerel East is the SPF. During 2019/20, the modal size of Jack Mackerel East taken in mid-water trawls (~200 mm FL) was below the approximate mean size at 50% maturity (~230 mm FL). Recent increases in catches of Jack Mackerel East reflect increases in fishing effort. The total catch of Jack Mackerel East was 5% of the 2019 estimate of spawning biomass and below the Tier 1 exploitation rate for this stock of 12%. The total catch by the SPF in 2018/19 was 42% of the available TAC. On the basis of the information provided above, Jack Mackerel East is classified as **sustainable**.

The spawning biomass of Jack Mackerel West in 2016/17 was estimated to be at least 31,000 t (Ward et al. 2018). There was no catch of Jack Mackerel West by the SPF in 2019/20 or 2018/19. The highest recent catches were 686 t in 2016/17 and 634 t in 2015/16. The main fishery for Jack Mackerel West has been the SPF. Recent annual catches of Jack Mackerel West have been <3% of the 2016/17 estimate of spawning biomass and below the Tier 1 exploitation rate for this stock of 12%. The total catch in 2019/20 by the SPF was 0% of the available TAC. On the basis of the information provided above, Jack Mackerel West is classified as **sustainable**.

Blue Mackerel

The spawning biomass of Blue Mackerel East in 2019 was ~80,000 t (Ward et al. 2021). The total catch of Blue Mackerel East in 2019/20 was 6,124 t, which is the highest on record. The second highest catch was 4,265 in 2018/19. The main fisheries for Blue Mackerel East are the SPF (93% in 2019/20) and the New South Wales Ocean Hauling Fishery (7% in 2019/20). During 2019/20, the modal size of Blue Mackerel East from mid-water trawls (240 mm FL) was below the mean size at 50% maturity (~287 mm FL). Recent increases in catches of Blue Mackerel East reflect increases in fishing effort. The total catch of Blue Mackerel East in 2019/20 was 8% of the 2019 estimate of spawning biomass and below the Tier 1 exploitation rate for this stock of 15%. The total catch by the SPF in 2019/20 was 32% of the available TAC. On the basis of the information provided above, Blue Mackerel East is classified as **sustainable**.

The spawning biomass for Blue Mackerel West in 2005 was estimated to be 56,228 t (Ward et al. 2009). There was no catch of Blue Mackerel West by the SPF in 2019/20 or 2018/19. The highest recent catches were 766 t in 2016/17 and 980 t in 2015/16. The main fishery for Blue Mackerel West has been the SPF. Recent total annual catches of Blue Mackerel West have been <2% of the estimated spawning biomass for 2005 and below the Tier 3 exploitation rate for this stock of 3.75%. The total catch in 2019/20 was 0% of the available TAC. On the basis of the information provided above, Blue Mackerel West is classified as **sustainable**.

Redbait

The spawning biomass of Redbait East was estimated to be ~70,000 t from surveys in conducted 2005 and 2006 (Neira and Lyle 2011). The total catch of Redbait East by the SPF in 2019/20 was 2,457 t, which is the highest annual catch since 2006/07, but well below the peak of 7,733 t in 2003/04. The main fishery for Redbait East is the SPF. During 2019/20, the modal size of Redbait East from mid-water trawls (170 mm FL) was above the mean size at 50% maturity (~150 mm FL). The recent increase in catches of Redbait East reflect increases in fishing effort. The total catch of Redbait East in 2019/20 by the SPF was 4% of the estimate of spawning biomass and below the Tier 2 exploitation rate

for this stock of 5%. The total catch by the SPF in 2019/20 was 17% of the available TAC. On the basis of the information provided above, Redbait East is classified as **sustainable**.

The estimate of spawning biomass for Redbait West in 2017 was 66,767 t (CI = 28,797–190,392) (Ward et al. 2019). There was no catch of Redbait West by the SPF in 2019/20 or 2018/19. The highest recent catches were 1,140 t in 2016/17 and 1,157 t in 2015/16. The main fishery for Redbait West has been the SPF. Recent catches of Redbait West have been <1% of the 2017 estimate of spawning biomass and below the Tier 1 exploitation rate for this stock of 10%. The total catch in 2019/20 by the SPF was 0% of the available TAC. On the basis of the information provided above, Redbait West is classified as **sustainable**.

Australian Sardine

The estimate of spawning biomass of Australian Sardine in the Sardine sub-area in 2020 was 42,724 t (95% CI = 15,487–69,962 t) (Ward et al. 2021). The total catch of Sardine in the Sardine sub-area in 2019/20 was 727 t, which is the highest annual catch since 2010/11. The main fisheries for Sardine in the Sardine sub-area are the SPF (31% in 2019/20) and the New South Wales Ocean Hauling Fishery (69% in 2019/20). Catches of Sardine from the Sardine sub-area have mainly comprised fish at or above the mean size at 50% maturity of ~150 mm FL. The total catch of Sardine in the Sardine sub-area was <2% of the 2020 estimate of spawning biomass and below the Tier 1 exploitation rate for this stock of 20%. The total catch by the SPF in 2019/20 was 1% of the available TAC. On the basis of the information provided above, Sardine in the Sardine sub-area is classified as **sustainable**.

Summary

All SPF stocks are classified as sustainable. DEPM surveys have now been conducted for all stocks. Resulting estimates of spawning biomass could be used to inform the establishment of target (e.g. B_{50}) and limit reference points (e.g. B_{20}) for each stock.

All SPF stocks are at Tier 1 except Blue Mackerel West and Redbait East. The DEPM was last applied to Blue Mackerel West in 2005. A survey of Redbait East was conducted in October 2020.

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